LETTER

FROM

THE SECRETARY OF WAR,

WITH

A report of the special agent of the lead-mines, relative to the sale or future management of the mineral lands of the United States.

January 23, 1841.

Submitted by Mr. Walker, and ordered to be printed, and that 500 additional copies be furnished for the use of the Senate.

War Department, *January* 22, 1841.

Sir: I have the honor to submit a letter of the Chief of the Ordnance Bureau, accompanied by a report of the special agent of the lead-mines, relative to the sale or future management of the mineral lands of the United States.

Very respectfully, your most obedient servant,

J. R. POINSETT.

Hon. Robert J. Walker,
Chairman Committee on Public Lands, Senate.

Ordnance Office,
Washington, January 15, 1841.

Sir: In addition to the report of the special agent of the lead mines, submitted to you on the 16th ultimo, I have the honor to enclose a continuation of the same; and, in connexion therewith, would beg leave to remark, that these papers exhibit a laudable ardor on the part of the agent to discharge the duties intrusted to him, which redound with great credit to his talents and industry. Many of his recommendations are good and salutary; but the greater portion of the *changes* suggested have been long in practical operation, but, owing to the delinquency of the miners, &c., for some years past, were probably considered obsolete, or perhaps entirely overlooked.

The assertion that the inducements held out by the Government to the early operators were illiberal, is not considered in accordance with the true state of the case. Until within a few years, the business was considered, and doubtless was, a very profitable employment, as well to the workers of the mines, as of revenue to the United States; and would still have continued so, had those operators not refused to comply with their obligations. To the statement that there is "no evidence of the miners having been

Blair & Rives, printers.

among the first to break" them, it may be proper to remark, that, if they were not the first, why did they refuse payment, and fail to discharge the obligations which they voluntarily entered into with the General Government?

The system of granting *permits* has always been cautiously executed, and was limited to a very few, who, from some peculiar causes, were justly entitled to the indulgence thus granted. But, a system of issuing them in large numbers, authorizing their possessors to enter on the public mines without *restraint*, except subscribing to a code of regulations, (the violation of which has, for the last few years, become almost universal,) would be sanctioning a practice which this department considers injurious to the public interest. A power to issue permits is not understood to have been unconditionally delegated to the agent; and, in fact, doubts may be reasonably entertained of the power of the department to grant such authority without a special act of Congress. From this system, therefore, the department feels constrained to withhold its recommendations; for, if the practice heretofore pursued, of leasing and licensing under large penalties, could not command compliance with these regulations, much less can it be expected when there is no sufficient forfeiture. The change proposed, viz: to relieve the smelter from the obligation of collecting and making a proper report of the lead made at his furnace, is conceived to be equally objectionable. The lessee and the licentiate are, by the existing regulations, both bound, with securities for each, in the sum of $25,000, to pay the rent agreed upon; and if relieved of this, the United States has little left but the faith of those, many of whom have hitherto failed to discharge their obligations.

The constant expectation by the people residing on the mineral lands, for some years past, of the passage of a law authorizing their sale, has been, it is believed, one of the primary causes of the miners refraining from leasing, &c.; and so long as the question is agitated in Congress without a decision, so long will this state continue. It is hoped, however, that the recommendations heretofore urged, and which are now respectfully reiterated, for the passage of a law authorizing the sale of the whole mineral lands, may be adopted at the present session. In recommending a plan of sale, however, the department doubts the expediency of dividing the land into ten-acre lots; and would, it is feared, have the effect of disposing, on the part of the Government, of such lots only as might abound in rich mineral, and these promiscuously interspersed over a large tract of country; while the remainder would probably be left unsold, and subject to highly injurious depredations; and it is considered by the department that forty acres, the sixteenth of a section, should be the minimum. In regard to the pre-emption recommended, as understood, it may be viewed in this light, viz: that it would give to the poor man, occupying a poor mine, his land at the minimum price; but, at the same time, would charge the wealthy man, holding a rich mine, no more; and is therefore considered objectionable. And the same objection applies in placing the mines of Missouri on an equality with the richer mines on the Upper Mississippi. If pre-emption should be granted, I would respectfully recommend a clause prohibiting defaulters, at least until their just liabilities to the United States should be entirely liquidated, or examined and secured. The subject in reference to the final disposal of the mineral lands demands a more careful investigation than can at this moment be given to it, and the possession in detail of more facts in relation to the occurrences at the mines during the last four years, than have yet been received.

The latter part of the report of the agent (say from the 7th or 8th page) is full of interest; the facts and views of the writer are happily expressed, and must carry conviction to the examiner. The plan of obtaining information is a good one, and is recommended for adoption. A duty on copper and zinc would undoubtedly accelerate and develop a favorable increase in our home productions, and would seem worthy of proper consideration; particularly as the great extent of our mineral resources throughout the region of country described is becoming every year more known. Their development, joined to the diffusion of the best practical methods of working the mines, properly appertains to the Government; which, in this case, finds both its interest and duty united, and, by its efficient discharge, the time may not be far distant when the imports of copper, lead, and zinc, will be reduced to an inconsiderable amount.

I have the honor to be, sir, your obedient servant,

GEO. BOMFORD,
Colonel of Ordnance.

Hon. J. R. Poinsett,
Secretary of War.

Washington, *December* 15, 1840.

Sir: In obedience to your instructions, I have the honor of submitting to you the following in relation to the sale or future management of the mineral lands of the United States.

The first law authorizing the leasing of the lead-mines was passed March 3, 1807. The superintendence of them, with the books, papers, &c., was transferred from the office of the Secretary of the Treasury to that of the Secretary of War, on the 29th of November, 1821.

On the 15th of June, 1822, *proposals* for leasing the mines were invited by advertisement in several of the western newspapers. The conditions upon which these leases were granted were as follows:

1st. The quantity of land granted to an individual or company not to exceed 320 acres.

2d. The duration of the lease to be three years.

3d. The lessee to commence mining and (if there should be wood on the premises) manufacturing of lead upon the land within two (at first it was nine) months after the date of the lease, and to continue such mining and manufacturing, with a force which was at no time to be less than twenty men, weather and season permitting, without cessation or intermission. If the lessee failed to have twenty laborers in his employ, he was to permit any miner to go upon the same tract and work, provided he delivered to the lessee all the ore he raised, on the lessee's securing to him the usual quantity of lead (or an equivalent) for each 100 pounds of ore; and the lessee, admitting his tract to be so occupied, was to be considered as keeping twenty men in his employ.

4th. The lessee at the end of every month was required to pay to the superintendent of the mines six pounds (at first ten pounds) of every hundred produced by said mining and manufacturing operations, in clean pure lead, as a rent for the use of the United States, and to deposite the same in a storehouse near Fever river (to be designated by the superintendent) free of expense to the United States. This condition was subject to the revocation of the Government, upon giving three months' previous notice; at which time it was optional with the lessee to accept or refuse the new terms. Upon his refusal to accept, the lease to cease and terminate.

5th. The lessee agreed, at his own cost and expense, to make all the necessary preparation and improvement for the prosecution and fulfilment of his part of the contract; for which purpose he was allowed the use of all stone, wood, and water, that might be found on the premises, to be used without waste or extravagance.

6th. The lessee was to keep a book or books, in which he was to keep a true and faithful account of all the mineral and lead which he raised, purchased, or manufactured; which book, or books, were to be always open to the inspection of the superintendent. And the lessee was further required to furnish the superintendent with a monthly abstract or return of such mining or manufacturing operations which the superintendent might require, to be verified by oath or affirmation.

7th. The lessee was prohibited from disposing of, or sub-leasing, the tract to any person; and from removing, or permitting to be removed, any part or the whole of the mineral from the mines, or place of manufacture, without the consent of the superintendent, until all arrearages of rent had been settled and paid.

8th. The lessee agreed not to permit any miner or laborer to commence working in his mines until he had signed the regulations.

9th. On the failure of the lessee to carry any of these conditions into effect, the superintendent was authorized to declare the lease forfeited, and to re-enter and take possession of the premises.*

Bonds were given by the lessee in the sum of $5,000 for the faithful performance of these conditions. The tract leased was regularly surveyed, and a plat accompanied the lease.

In 1825, chiefly at the solicitation of the miners, the office was authorized to issue *licenses* to smelt without mining. These smelters being found convenient agents for collecting the rent, they were required to undertake this duty, and a bond for the sum of $10,000, with two securities, required for its faithful performance.

There appears, also, to have been granted a privilege to mine on the public lands, called a *permit*. The time at which this extra-official arrangement originated is not exactly known, but it was most probably at an early date. It, no doubt, often happened that a lessee failed to employ the number of persons required on his survey; this failure justified the working of individuals, properly authorized, on the same tract. It is not improbable, also, that there were many miners who were unwilling to hire their services to others, but who were unable to give the necessary security to obtain a lease. As the Government was under no risk of losing the rent for such persons, from the fact that there were none but authorized smelters in the country, the granting of these permits, if not in strict accordance with the regulations of the office, was at least safe, and perhaps justifiable.

It thus appears that inducements, not exactly the most liberal, were held out by the Government of the United States, to secure a proper development of the resources of this portion of the public domain. Farmers, merchants, mechanics, and others, were allured from the pursuits to which they had been educated, and induced to commence one with which they were not acquainted; yet, under all the difficulties of a new occupation, in a new country, surrounded a considerable part of the time by savages often inimical to the whites, they have prosecuted their labors with untiring industry, if not entire success.

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* See printed form of lease.

For several years, the regulations by which these mines were governed operated well. The miner was satisfied, and paid his dues punctually to the smelter; who also fulfilled his engagements, by placing the amount collected at the disposal of the United States. About the year 1830, a change appears to have commenced: some one or more smelters failed to make their returns. Year after year this defalcation spread, until 1836, when the whole refused, or failed, to fulfil this part of their obligations. Since then, no rent has been collected by the Government from miner or smelter.

There is no evidence that this defalcation originated with, or was at the instance of, the miners generally. On the contrary, the alacrity with which they came forward, on my arrival among them, and acknowledged the authority of the Government in the matter, by subscribing and submitting to the regulations, authorizes me to express the opinion that *they* would have continued to perform their obligations faithfully, had there been any means by which it could have been done.

It appears, then, that the persons now occupying these lands as miners, cannot be considered as trespassers; that they have gone upon the lands by the invitation of the Government of the United States—originally under a contract, which there is no evidence of their having been the first to break. Confiding in the justice and liberality of the Government, these miners have become deeply interested in these mines. If a change in the relation which the United States now bears to these lands shall be determined upon, there is not, in my mind, a doubt of the propriety of first securing to the miners the interests that they have fairly acquired. In submitting a plan of sale, I therefore feel bound to introduce appropriate provisions for this purpose.

There is at this time no lease or license in legal existence; all those heretofore granted having expired by their own limitation. Nor am I aware of any claim or tract held under these defunct titles. All claims now are by lots. These were, at first, three hundred yards square; subsequently reduced to two hundred yards square, or about nine acres, and staked out at the discretion of the miner. The time for which these permits were granted has also, of course, expired; but the title of the occupant miners to their lots is generally recognised by the citizens, and, I believe, the courts.

I have already issued from four hundred to five hundred permits; and I have no doubt that almost every lot, fairly held and faithfully worked, will be covered by one during the ensuing year. The whole number necessary to accomplish this will, I think, not exceed fifteen hundred.

Such is the present condition of the mining operations, that there are very few parts of the country in which galena is supposed to exist, to which a lease could be granted that would not interfere with existing claims. I do not, therefore, deem it necessary to make any provision for such titles.

The plan of sale which I would respectfully recommend is, then, as follows:

1. That the right of pre emption be granted to each lot, of which satisfactory proof shall be given to the agent or superintendent of the lead-mines that it was held under an existing permit, and that it had been worked in accordance with the regulations.

2. The price at which this entry should be permitted, should be the minimum of other public lands.

3. After having thus provided for these claims, I would transfer the remainder of these lands to the land offices, to be disposed of as other public lands.

Under the arrangements which I found it necessary to introduce, a lot now is equivalent, generally, to ten acres; which, although a little larger than formerly, was the smallest subdivision of the section that could be conveniently made. On application for entry by pre-emption, the pre-emptor will be required to designate the lot which he claims, as the quarter of the quarter of the quarter of section &c. The permit under which he claims it should be presented, or satisfactory evidence of his having had one, if it be lost.

Without a provision of this latter kind, innumerable claims will be presented that have no just foundation, and often many for the same lot.

These requirements being satisfactorily fulfilled, the agent or superintendent should issue his certificate thereof, directed to the receiver and recorder of the land office of the district in which the lot lies. On the presentation of this certificate, and not otherwise, the said lot should be allowed to be entered. The claims to entry under these certificates, and the entries so made, should take precedence of all others. A slight compensation to the officers of the land office, to be paid by the pre-emptor, would suffice for the additional labor thus produced.

The price at which the entry should be allowed, is a subject entitled to serious consideration. Many of the lots are worth hundreds, or even thousands, of dollars; but the discovery of their riches has generally been by those who had spent years, perhaps, in previous profitless search: consequently the value is not more than a fair compensation for their risk and lost labor. Moreover, in many instances these valuable lots have passed out of the hands of the discoverers. To make those who now hold them at second, third, or fourth transfer, again pay the *estimated* value, would be ruinous, if not unjust.

If, instead of fixing the price, by *estimate*, on each lot, an average higher than that for other public lands be taken, it will not be less liable to objection. The higher this average, the greater the number of persons that will suffer from it. Of two lots beside each other, it often happens that, whilst one is yielding a highly profitable return, the other is scarcely paying the miner the value of his labor. There are many lots worked, whose average annual yield is not more than sufficient to maintain the miner and his family. It generally happens that the rich lots pass into the hands of the richer class of miners, whilst the poorer ones continue in the possession of those whose condition in life corresponds with the character of the mine. A price that would be scarcely inconvenient to the owner of one, might be very oppressive to that of the other.

These considerations are, in my opinion, sufficient to justify the recommending of the selling of these lands to the occupant miners at a price not higher than other public lands. But there are other important reasons. A law has been already passed, authorizing the sale of the mineral lands of Missouri at this price. Although the Missouri mines have not for some years been so productive as those of the Upper Mississippi, they have still many important advantages. Would it be just to the latter to increase these advantages by a difference in price?

Again: the farmer places himself upon a portion of the public domain, builds on, and improves it. After a few years it comes into market, and he is allowed to enter it, not at its improved valuation, but at that which it is supposed to have been worth in its wild uncultivated state. The miner goes upon a tract of land, at the *invitation of the Government*, works on, and improves it; certainly with greater chances against him, and more difficulties to contend with, than the farmer had. In a few years this land may also be ordered for sale. Then the miner wishes, of course, to secure his lot. Should it not be on as favorable terms as were granted the farmer? The improvement in the value of the grounds of both, is the result of the same cause—perseverance and industry. Is it proper to encourage these in one pursuit, and oppress them in another?

This disposition of these mineral lands having been made, and the claims against smelters and others settled, I would recommend the discontinuance of the United States lead-mine office.

If Congress shall refuse to sell these lands, the only alterations I can recommend in the present system of management, are:

1st. To collect the rent directly from the miner.

2d. To prohibit any person from working on the mineral lands of the United States who has not a permit.

3d. To authorize the immediate prosecution of those who attempt to mine on said land without a permit, or who, having one, fails to make the proper returns.

4th. The granting of no more leases or licenses.

5th. An explicit grant of authority to the agent or superintendent to issue permits, requiring of him a quarterly return of the number and the names of the persons to whom issued.

6th. A re examination of the mineral reserves, and a return to be made to the land office of the district, and to the Ordnance Department, of such as have no mineral indications.

Some difficulties present themselves as to the proper disposition of the lands containing other minerals than lead, as copper and zinc. Doubts exist as to the power that the act of March 3, 1807, gives to the President, and, through him, to the lead-mine office, over mines of these minerals. There are unequivocal indications of their existence in the mineral lands to a considerable extent; and mining for them has been, and now is, successfully carried on. If Congress will not sell these lands, an act should be immediately passed upon the subject, and all of them placed under the control of the same office. It is preposterous to suppose that there is any thing in the character of lead, that should make it the subject of special legislation. When the law of 1807 was passed, it was not known that mines of any other mineral than lead existed in this portion of the United States territory. Now, that better information is possessed, and reasonable doubts exist of the authority under that law, the propriety of further legislation is unequivocal.

"A plan for the improvement of the mining operations" of this country, "if improvement can be made," as further required by your instructions, involves some such important considerations, that I must take the liberty of enlarging with some freedom upon it.

The extent of the mineral resources of the Mississippi valley is yet unknown. The area of the territory embracing the Upper Mississippi lead-mines is estimated by Dr. Owen at two thousand eight hundred and eighty square miles *. But this is now supposed to be too limited as lead ore, and the same geological formation as that in which the mineral was found by him, is now known to extend far westward of the limits which he has given them. In Missouri I have traced the mineral formation from the Mississippi river to the western limits of the State; and it is known that it extends from the Missouri river to the State of Arkansas, embracing also the southern part of the State of Illinois. It would be safe to estimate these, the upper and lower mineral regions, at thirty thousand square miles. The metallic minerals already found in them are ores of iron, lead, copper, zinc, cobalt, manganese, antimony, and, cadmium; and doubtless, many others will be added on a more minute examination of the country. The great coal-basins of Illinois and Missouri separate and skirt these two regions. Valuable farming land exists throughout both. Water power is almost everywhere abundant; and the numerous navigable streams that pour their tributary waters into the Mississippi and Missouri rivers afford the greatest facilities for transportation.

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*Dr. Owen's report, Doc. No. 239, H. R., 1840,

The only metals yet wrought are lead, iron, and copper. The first attracted the attention of the earliest settlers of this country. I have no means of ascertaining the amount produced before the opening of the United States mineral land office; but it was probably not very great. Iron is but slightly manufactured, even yet; there being, I believe, but two furnaces for the reduction of this metal above the mouth of the Ohio river. It has only been within a few years that the copper ore has attracted any attention, and less than three since the smelting of it commenced.

The following table exhibits the annual production of lead from the lead-mines, from the year 1823 to that of 1829:

Table of the annual produce of the United States lead-mines.

Years.	Pounds.
1823 - - - - - -	335,130
1824 - - - - - -	175,220
1825 - - - - - -	1,051,120
1826 - - - - - -	2,333,804
1827 - - - - - -	6,092,560
1828 - - - - - -	12,311,730
1829 - - - - - -	14,541,310

Through the delinquencies of the smelters, the records of the office since 1829 cannot be depended upon for correct information on this subject. Dr. Owen, on what appears to be good authority, gives the produce of the Upper Mississippi mines at thirty millions for the year 1839. If to this be added three millions for those of Missouri, (the estimated amount,) we shall have the entire produce of that year thirty-three millions of pounds.

This increase of above eighteen millions in ten years, may, (with some slight exception,) about the year 1830, be supposed to have been gradual. Whether the estimate for 1839 be exaggerated or not, it is certain, from the following table, taken from the report of the Secretary of the Treasury, on the finances, dated December 24, 1839, (Senate Doc. No. 2, 26th Congress, 1st session,) that there has been a gradual decrease in the importation of the article, and that we have at last arrived at that condition in which its production is equal to its consumption.

The annual amount of the import of lead into the United States from 1823 to 1838.

Years.	Amount.
1823	$155,175
1824	107,484
1825	301,408
1826	265,409
1827	303,615
1828	298,544
1829	52,146
1830	20,395
1831	52,410
1832	124,631
1833	89,019
1834	183,762
1835	54,112
1836	37,521
1837	17,874
1838	10,494

The amount of pig, bar, and sheet lead imported during the year ending September, 1839, was $18,631; the exportation of the same, $8,369; leaving for domestic consumption $10,262, or $232 less than the year preceding.—See Secretary of the Treasury's report of the imports and exports for that year.

It will be observed that a great diminution in importation took place in 1830; but this was attributable to the excess of supply on hand from the several preceding years' importations. About the year 1825 the lead-mines of Spain became extraordinarily productive. The markets of Europe, as well as of this country, were inundated for several years with the article from that country. It is evident, however, from an examination of the table, that the present decline is not attributable to any such cause, as there has been no extraordinary increase in importation within the last five years.

Then, as the domestic lead exported for the year 1839 amounted to $6,003, which, deducted from $10,262, the amount of the foreign lead retained for our own use, leaves $4,259 only as the balance against us, it may be considered that we have reached the important crisis in which our production, as before remarked, equals our consumption.

That our future wants, under ordinary circumstances, may be supplied by our own mines, there is no doubt, if the increase which has taken place already in their productiveness should continue.

The minimum price of lead at Galena (Illinois) is about $3 per hundred pounds. The transportation, and other expenses, in conveying it thence to New York, or any other of the Atlantic cities, may be estimated at one dollar and a half per hundred; making the net minimum cost, in any of these cities, about 4½ dollars per hundred. The amount of pig, bar, and sheet lead imported in 1839 was 528,922 pounds, valued at (as before observed) $18,631; which is equivalent to three dollars and fifty-two and a fourth cents per hundred. As the duty on this article is specific, or so much per pound, I know no reason that would justify a doubt as to the correctness of this price. If this be its cost in the other markets of the world, it is evident that we cannot compete there with the foreign producer of this article. It is true that our lead is of a superior quality to, and generally, I believe, bears a higher price than, the foreign; but in the estimate made of the cost of the latter, it was necessary to introduce *sheet*, it being embraced with *pig* and *bar* in the Secretary of the Treasury's report. The greater value of this will, I presume, equalise the superior quality of our article.

Relying on the best information I could obtain, I am forced to the conclusion that lead cannot be produced at our mines for less than three dollars per hundred, under existing circumstances. It necessarily follows that, unless improvements can be introduced into our mining operations, the present produce of the mines, allowing for its gradual increase, is as much as could be desired; for if any surplus should occur, a decline in prices must follow, and be more or less injurious to the prosperity of the mining interests.

The rapid improvement in the production of our mines would justify the presumption that the best systems of mining had been followed, and every attention had been paid to the improvement of the smelting process. This would be a very incorrect judgment. The primitive hand windlass, with its rude tub, and often raw-hide cord, greets the eye almost everywhere. The greatest depth to which any shaft has yet been sunk is about 200 feet below the surface of the ground. From a few of the mines the water is removed by rudely constructed pumps, worked by horses or oxen; but, generally, the appearance of water in the mine limits the descent of the miner, and forces him to seek a new spot for his operations. In the early time of these mines, the very appropriate title of "diggings" was given to the various places in which such mining was conducted. There is scarcely improvement enough yet to justify the abandonment of the name.

If we reflect upon the class of persons who have conducted these mines, the short time they have been in operation, and the difficulty of diffusing the scientific information or the practical improvements of other countries, in places so remotely situated, our astonishment at the little progress made in the art of mining will be much lessened. As before observed, the present miners are constituted chiefly of those who have been reared to other pursuits; and, consequently, what knowledge they have on the subject is the result of a few years' experience and reflection. When the Government of the United States invited proposals for leasing these mines in 1822, a capital error was committed in not devising some means to diffuse such information among those whom they were engaging in this new pursuit, as would have enabled them to pursue it to the greatest advantage to themselves and the country. The import duty on foreign lead seems to have been the only boon conferred upon them; and whilst this has not been sufficient to protect them from the influence of foreign competition entirely, it has added hundreds of thousands of dollars to the expenses of the people, which would have been saved, without injury to any one, had a more judicious course been pursued.

Nor is it to the improvement of mining only that we should look for a reduction in the cost of lead. Although less progress has been made in it than in smelting, the latter, in this country, is far behind what it is in others.

The ore of the Mississippi mines is remarkable for its purity and freedom from foreign ingredients. That of the Upper Mississippi mines is rarely accompanied by any gangue, strictly speaking; being generally found in a reddish clay, easily removed by affusion. With good furnaces, properly worked, the best quality of this ore ought to yield nearly or quite 80 per cent: it is highly probable that, by the present process, it does not yield 70 per cent. As great unnecessary cost is added to the smelting operations by irregularity and want of system, it would be safe to estimate the entire additional cost of producing our lead from these causes at 15 per cent. A reduction to this amount alone would, it is probable, place our article at a price to compete with the foreign in our markets, without the protection of the present or any other import duty.

But any system for the improvement of these mining operations would now be incomplete, that did not embrace other metals, and particularly copper and zinc. I might also particularize iron, as not less worthy of attention, from its abundance, and the many facilities for its manufacture. As this, however, is a metal never intended to be embraced in the operations of this office, it would scarcely be proper for me to dwell upon it.

Dr. Owen reports (what I have had an opportunity of verifying) that there is a valuable deposite of copper ore in the region embraced in the Upper Mississippi lead-mines. Whilst there, I found the mining of this mineral going on to a considerable extent. Through the public press, I have since learned that efforts have been made to smelt it.

In Missouri there is evidence of the existence of this mineral to a much greater extent. I found it in several localities on the Osage river. It exists at Mine à la Motte, and other places in that section of the State; and within a few years it has been discovered to such an extent on the Currant river, as to justify, as is already known to you, its exploration and smelting.*

The extent to which this mineral is known to exist in this portion of the Union, is already, probably, greater than that of lead at the passage of the law reserving the mines of the latter from sale; and I presume there can be no doubt that if this information had existed at that time, both of these minerals would have been embraced in the law.

The importation of copper into the United States, for the year ending the 30th September, 1839, was—

Free of duty - - - - - -	$1,818,893
Paying ad valorem duty - - - - -	159,191
Specific duty - - - - - -	4,100
	1,982,184

As this article is necessary to many of our manufactures and trades, whilst these continue to improve, the increase in the consumption must necessarily follow. The best means of securing a supply of our own production, (if this be possible,) is therefore, of course, an object worthy the consideration of those who watch over and give encouragement to our national resources.

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* Much valuable information in relation to this subject exists, I have reason to believe, in the General Land Office.

There are, however, connected with this particular metal, other circumstances particularly worthy of public attention. By the encouragement that Great Britain has given to her mining interests generally, but more especially to her judicious legislation in relation to the metal now under consideration, she has secured to herself a monopoly in its trade and production, rendering the mines producing the ore in America, and a large part of Europe, tributary to her smelters in Swansea.

The following table of the copper produced from British and from foreign ores, exported for ten years ending 1837, by Great Britain, will show the rapid advances she made to this monopoly after the organization of this system:

Table of the exports of copper manufactured from British and from foreign ores, by Great Britain, for ten years. (From the Journal of the Statistical Society of London, vol. 1, p. 83.)

Years.	From British ores.	From foreign ores.	Total.
	Tons.	Tons.	Tons.
1827	7,171.0	–	7,171.0
1828	6,206.0	7.0	6,213.0
1829	7,976.0	33.6	8,009.6
1830	9,157.7	164.1	9,321.8
1831	8,530.6	354.4	8,885.0
1832	9,730.6	694.7	10,425.3
1833	7,811.6	1,624.6	9,436.2
1834	8,886.5	1,185.7	10,072.2
1835	9,111.2	2,772.8	11,884.0
1836	8,076.2	1,939.0	10,015.0
1837	7,129.3	5,155.2	12,284.5

Thus, in less than ten years, by judicious legislation, she has become the smelter of the ores of foreign countries to an amount almost equal to the production of her own mines. It is probable that the two last years would show a much greater increase.

The ores imported for five years, from which this foreign copper was manufactured, amount to the following. (From Third Annual Report of the Swansea Phil. Institution.)

Places.	1833.	1834.	1835.	1836.	1837.
	Tons.	Tons.	Tons.	Tons.	Tons.
Into Liverpool -	3,235	2,786	6,696	7,479	5,928
" Swansea -	2,562	4,276	7,008	9,074	12.665
" Llanley -	134	220	230	693	299
" London and Bristol	1	19	5	1,173	604
Total -	5,932	7,301	13,945	18,419	19,496

Among the ores imported into Swansea for the year ending 30th June, 1838, were the following:

Places.	Tons.	Value.	Av. per ton.
From Chili - -	5,619	£115,915 1*s*. 6*d*.	£20 12*s*. 7*d*.
" Cobre mines (Cuba)	5,644	114,406 15 6	20 5 4
" Copiapo -	1,047	19,475 9 0	18 13 4
" Cuba -	1,133	20,604 11 0	18 3 8
" Mexico -	90	797 13 0	8 17 3
" Norway -	1,591	18,303 7 6	11 10 0
" Valparaiso -	1,920	33,859 14 0	17 12 8

And it may tend to awaken our people's attention to this important subject, to know that our own copper-mines are about to feel the influence of this system; a shipment, to a large amount, of the copper ore of Wiskonsan Territory, having been recently made to Great Britain!

Dr. Ure, in his remarks on the statistics of copper,* says: "The export of British unwrought copper to the continent, and to the United States of America, was formerly inconsiderable. These countries drew the bulk of their supplies either from the north of Europe, or direct from South America, in pig-copper. In point of fact, the copper derived from the import of foreign ores, for smelting has produced for itself a new market." And after giving a table for the export of unwrought copper from Great Britain to all parts of the world, for several years, he proceeds: "Let any practical man consider attentively the table, and compare it with the import of foreign ores for the same period, and with the gradual advance in the price of copper;† and then let him, if he can, avoid the conclusion that the admission of foreign ores, for smelting, was a great boon conferred upon the British copper-mines, for it made this country what it now is—*the regulator and distributor of the copper produce of the world;* the country to which all others consuming and not producing copper must look for a regular, certain, and economical supply. We want the admission, merely under proper and safe regulations, of foreign copper for refining, to draw to this country *the whole supply of copper for the world;* by which prices would be regulated and maintained, and OUR copper-mining interests put beyond the reach of successful rivalry."

These startling declarations, *from such authority*, should awaken the attention of our public authorities. We have a territory of over thirty thousand square miles, with indications of the existence of the ores of copper throughout it, and in great abundance. Cornwall, which produces six-sevenths of all the copper ores of Great Britain, contains only

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*Dictionary of Arts, Manufactures, and Mines: London, 1839.

† *Table showing the standard increase of the price of copper from the mines of Cornwall from* 1831 *to* 1837. (*Compiled from Ure's Dictionary of Arts, Manufactures, and Mines.*)

Year 1831	- - - - - -	100 standard.
" 1832	- - - - - -	100 "
" 1833	- - - - - -	111 "
" 1834	- - - - - -	114 "
" 1835	- - - - - -	106 "
" 1836	- - - - - -	115 "
" 1837	- - - - - -	120 "

1,407 square miles. The average value of a ton (21 cwt.) of the Cornwall ore is less than £6; that of the foreign generally, as we have seen, from £18 to £20. The average of copper in the ore of the former is about 8 per cent. The analysis by Dr. Owen (see report) of three specimens of that from Wiskonsan gave an average of about 27 per cent. We may, therefore, presume that our ore would be worth three times as much as that of Cornwall, and generally as much as that of other foreign ores in Great Britain. The mines of Cornwall are worked to depths exceeding a thousand feet, and require the most powerful and costly steam enginery in the world. So far as its exploration has yet gone, our ore is found as accessible as our lead ores, and can be produced upon the same economical scale.

With these advantages, we might smile at the pretensions of the miners and smelters of copper of Great Britain, if statistical facts did not give them such support as to render them a subject worthy of our most serious consideration. It is no agreeable fact to know that, whilst we are tributary to the mines and furnaces of a foreign country for this article, to the amount of about two millions of dollars annually, we have in our own territory, untouched, the materials for its production in the greatest abundance, and at (most probably) a much cheaper rate.

I am not aware of the existence of any mining or smelting of zinc in the United States. The amount of this metal consumed by us is, probably, much less than that of lead; but, whatever it may be, we are entirely dependent upon other countries for its production, whilst, as in copper, we have an abundant supply of its ores unnoticed.

If, at the opening of the mineral land office, those who were *invited* to become miners by the Government had had placed within their reach the practical and scientific knowledge on this subject then possessed by the rest of the civilized world, there is not a doubt but that we should have been an exporter of lead many years ago.* What has been the cost of this want of knowledge to the country? Let us suppose that it had only been since the last five years that we had held this position. During that time, the average price of lead in the country *has been* at least five cents per pound. If we had been an exporter, it could not have been more than three and a half—or let us say four cents. Producing and consuming now thirty-three millions, it will be safe to average these five years at twenty millions of pounds each. Consequently, we have annually thrown away two hundred thousand dollars, or one million for this single article. It is thrown away, because it has been of no advantage to producer or consumer.

A statement statistically of the smelting operations in lead in this country, from the time of the log furnace to the present moment, would show a loss, or total annihilation of wealth, in destroyed material, that would be almost incredible. I regret that I have not data sufficient to make such a statement. It would be highly interesting; for, in the same proportion as we have thus and otherwise suffered in lead, may we expect to suffer in copper, zinc, and perhaps other metals, if we pursue the same course.

I have been thus prolix, sir, on this subject, because I believe it important that it should be distinctly seen that improvement is necessary in the mining and smelting operations of our country. It is a subject replete with public interest, and eminently worthy immediate attention. Whether the mineral reserves be sold or not, its aspect is not changed in a national point of view. *The most important object is, to have these mines thoroughly and economically worked;* and the mere difference of the few dollars that may be put into the public treasury, by disposing of them in this or that manner, sinks into insignificance when compared with it.

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* The whole annual amount of lead produced in Europe is estimated at about one hundred and sixty-eight millions of pounds; of which Great Britain produces four-sevenths; Spain two-sevenths; and the north of Europe chiefly the remainder. Our production being thirty-three millions, we already stand the third on the list of producers in the world.

It is scarcely necessary, I presume, to express my conviction that this improvement can be made. No person that has had an opportunity of examining the matter, with capacity to judge of it, can have a doubt in relation to it.

But the means of accomplishing this important object do not lie in this office; they must be had from another source.

Perhaps my official duty might properly close with the expression of this opinion. The interest which the country has in the subject, and the attention I have had to give to it, will however, it may be presumed, justify the pointing out what, after the most mature reflection, appears the best, if not the only means of accomplishing the object. Briefly, they are—

1st. The immediate collection of such information as may be necessary to put our own citizens in possession of a knowledge of the best means of conducting mining, smelting, and other metallurgic processes.

This will be most thoroughly accomplished by the appointment of a suitable person to visit the mines, mining schools, &c., of Europe, to obtain a thorough knowledge of the geological and mineralogical character, produce, and methods of mining in those mines. Whilst there, the agent should make himself familiar with the various processes of smelting, and other metallurgic operations; obtain models or drawings of all machinery, furnaces, &c., used in the different operations and mines; and, collect generally, all statistical or other information that may have any important relation to the subject. On his return, the whole should be reported, and otherwise placed at the disposal of the Government.

2d. A duty, consistent with other interests in the country, should be imposed on foreign copper and zinc, and perhaps upon other metals.

In submitting this, I have the honor to subscribe myself, sir, your obedient servant,

H. KING,
Agent United States Lead mines.

Lieut. Col. Talcott,
Ordnance Department.

Note.—Since this report was written, I have learned that efforts were made, at an early day, to diffuse information among those interested in these mines, in relation to mining and smelting. It was to be expected that the intelligent and able officer (Colonel Bomford) then in charge of these matters would see and appreciate the necessity for such information; but the result has proven the inefficiency of these efforts, with the limited facilities that the country then presented for obtaining and diffusing such knowledge. Were the office, with its present powers, to make the effort, it would produce a similar result, with all the advantages that the country now possesses. To accomplish this purpose in a manner commensurate with its importance in a national and economical point of view, will necessitate congressional action.

H. KING,
Special Agent U. S. Lead-mines.